

USSR

UDC 539.27

BARZDAYN, P. P., ALEKSEYEV, N. V., LEVKIN, N. P.

"Attachment for Direct Recording of Gas Electron-Diffraction Patterns"

Moscow, Pribery i Tekhnika Eksperimenta, No 5, 1972, pp 223-225

Abstract: An attachment is described for continuous recording of gas electron-diffraction patterns the sensitive element of which is a scintillation counter. The variations in density of the vapor jet from the investigated substance and the brightness of the primary electron beam are compensated for by application of a two-channel recording system at the output of which the ratio of the intensities of the scattered electron emission recorded by each channel is fixed. A special module permits measurement of the accelerating voltage (with an accuracy of ~1%) directly during the experiment. By using the described device the scattered electron emission intensity can be recorded as a function of the angle of dispersion for the low-volatile materials to the regions of the angles of dispersion corresponding to $28-30 \text{ \AA}^{-1}$.

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2/2 009

UNCLASSIFIED

PROCESSING DATE--02 OCT 70

CIRC ACCESSION NO--AP0103970

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ELECTRON DIFFRACTION INVESTIGATION OF THE TITLE COMPD. SHOWED THAT THE STRUCTURE CONTAINS A LOCALIZED SIGMA GE-C BOND BETWEEN THE C SUB5 H SUB5 RING AND THE GE SUB3 GROUP. THE GE ATOM HAS TETRAHEDRAL ENVIRONMENT, WITH 4 EQUAL GE-C BONDS (1.97 ANGSTROM EACH) AND LIES IN A SYMMETRY PLANE OF THE C SUB5 H SUB5 RING. THE C SUB5 H SUB5 RING IS NOT PLANAR. ONE C ATOM LIES IN A PLANE FORMING A DIHEDRAL ANGLE OF 24 PLUS OR MINUS 4DEGREES TO THE PLANE OF OTHER FOUR C ATOMS, WHICH FORM A BUTADIENE LIKE GROUPING. THE GE-C BOND FORMS AN ANGLE OF 52 PLUS OR MINUS 4DEGREES TO THE PLANE CC(GE)C, THE THREE C ATOMS BEING A FRAGMENT OF THE C SUB5 H SUB5 RING. THE C-C BOND LENGTHS IN THE C SUB5 H SUB5 RING ARE 1.50 AND 1.46 ANGSTROM.

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--ELECTRON DIFFRACTION STUDY OF THE STRUCTURE OF (CH SUB3)SUB3
NEGATIVE GEC SUB5 H SUB5 CYCLOPENTADIENYLTRIMETHYLGERMANIUM -D-
AUTHOR-(05)-USTYNYUK, YU.A., STRUCHKOV, YU.T., ALEKSEYEV, N.V.,
VENYAMINOV, N.N., RONOVA, I.A.
COUNTRY OF INFO--USSR

SOURCE--ZH. STRUKT. KHIM. 1970, 11(1), 127-9

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ELECTRON DIFFRACTION ANALYSIS, GERMANIUM COMPOUND, MOLECULAR
STRUCTURE, COMPLEX COMPOUND, CYCLIC GROUP

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/0315

STEP NO--UR/0192/70/011/001/0127/0129

CIRC ACCESSION NO--AP0103970

UNCLASSIFIED

USSR

ALEKSEYEV, N. V.

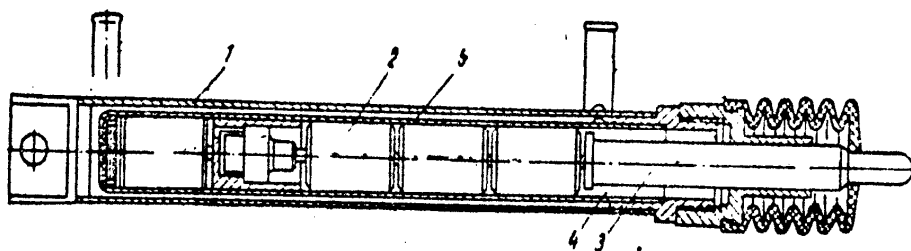
"Use of Mathematical Modeling to Determine Longitudinal Displacements During Twisting of Taps"

Tr. Ufim. Aviats. In-ta [Works of Ufa Institute of Aviation], 1971, No 32, pp 101-104 (Translated from Referativnyy Zhurnal Mekhanika, No 5, 1973, Abstract No 5V473, by V. B. Geronimus).

Translation: Two methods are studied for producing pictures of the deformation of the cross section of a twisted rod by mathematical modeling methods: 1) application of the electrohydrodynamic analogy and 2) use of electromagnetic modeling with an electromagnetic two-dimensional vortex field integrator. The experience gained in using both methods has shown that they can be successfully used to study taps during twisting, but the use of the integrator has doubtless advantages. The quantitative results produced on displacements of teeth of the taps in the axial direction allow the necessary data to be produced for the creation of special designs of taps with altered tooth geometry, corresponding to the geometry of a tap twisted to the necessary angle in the opposite direction. This assures the required tap geometry during cutting, decreases torque and may improve accuracy of the thread produced. 5 biblio. refs.

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AA0046433



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AA0046433

UR 0482

Soviet Inventions Illustrated, Section III Mechanical and General
Derwent, 1-70

244011 SHUTTER CONTROL DEVICE for engine coolant system, comprising body connected to coolant system with a series of thermostatic elements acting on a shutter control rod, differing in the elements being in a sealed cavity separate from the coolant system and filled with an intermediate passive fluid. This improves reliability. The device consists of body 1 with coolant inlet and outlet, thermostatic elements 2 set in sequence and acting on shutter control rod 3. Elements 2 are placed in sealed cavity 4, separated from the coolant system by wall 5, and filled with an intermediate passive fluid. With the engine running, as the temperature regime changes, elements 2 move shutter control rod 3, altering the degree of opening and thus regulating the quantity of air passing through the cooling system.

1.2.67 as 1131345/24-6. ALEKSEEV N.P. (29.9.69) Bul 17/
14.5.69. Class 46c. Int.Cl.F 02f.

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19781651

Acc. Nr.

APO043176

Abstracting Service: 4-78
CHEMICAL ABST.Ref. Code
UR0217

88546c Effect of metabolic inhibitors and ouabain on the receptor potential of isolated frog muscle spindle. ~~Aleksyev, N. P.; Makarov, P. O. (Dep. Biophys., A. A. Zhdanov Leningrad State Univ., Leningrad, USSR). *Biophizika* 1970, 15(1), 93-8 (Russ).~~ Perfusion of isolated frog muscle spindle with Ringer soln. contg. 3mM NaN_3 or 0.2mM 2,4-dinitrophenol decreased the amplitude of the hyperpolarization phase of the receptor potential and then reduced the depolarization phase and the amplitude of potential action within 1 min or 50-40 sec; resp. Changes in the receptor potential were reversible. Ouabain at 15 μM decreased the hyperpolarization phase of the receptor potential for the 1st 4-5 min and then reduced the depolarization phase and the action potential. Washing with physiol. saline for 30-40 min did not restore the receptor or action potential. The observed effects on receptor potential probably result from interference of ouabain and the metabolic inhibitors with the Na^+ pump. BJJR

REEL/FRAME
19761340

USSR

UDC 547.739.3'812'821

DULENKO, V. I., ALEKSEYEV, N. N., and BARANOV, S. N., Donetsk Branch of Physical-Organic Chemistry, Institute of Physical Chemistry, Acad. Sc., UkrSSR, Donetsk

"Selenopheno [3,2-c]pyrylium Cation -- A new Heteroaromatic System"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 7, Jul 71, pp 997-998

Abstract: Acylation of 5-methyl-2-acetonyl derivatives of selenophene (I) with carboxylic anhydrides (II) in presence of equimolar quantities of perchloric acid (III) yields selenopheno[3,2-c]pyrylium perchlorates (IV). The reaction is carried out at room temperature by adding (I) to a previously prepared mixture of an equivalent amount of (III) and excess (II). The structure of the products was supported by IR spectra. An intensive band at $1620-1616\text{ cm}^{-1}$ was assigned to symmetric valence vibrations of the pyrylium cation. The product is a new heteroaromatic system capable of reactions typical of the pyrylium system: reaction of ammonia with selenopheno[3,2-c]pyrylium salts yields new selenopheno[3,2-c]pyridines: 2,3,4,6-tetramethylselenopheno[3,2-c]pyridine, m.p. $81-82^{\circ}$ and 2,4,6-trimethylselenopheno[3,2-c]pyridine, m.p. $59-60^{\circ}$.

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USSR

NEVSKIY, O. B. et al., Elektron. tekhnika. Nauchn.-tekhn. sb. Mikroelektronika, 1971, vyp. 4(30), pp 176-184

A description is given of methods of monitoring and controlling the process to obtain zero magnetostriction and the required pulse parameters. Seven illustrations, bibliography of thirteen titles. Resumé.

USSR

UDC: 681.32.001

NEVSKIY, O. B., NESTEROV, P. V., ALEKSEYEV, N. M.

"A Transfer Line for Continuous Electrochemical Deposition of Cylindrical Magnetic Films"

Elektron. tekhnika. Nauch.-tekhn. sb. Mikroelektronika (Electronic Technology. Scientific and Technical Collection. Microelectronics), 1971, vyp. 4(30), pp 176-184 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 10, Oct 71, Abstract No 10B136)

Translation: The paper describes the flowchart and design of a line for continuous electrochemical deposition of cylindrical magnetic films. The line performs the operations of cathodic degreasing, electropolishing, deposition of copper and deposition of permalloy with zero magnetostriction (80 percent Ni, 10 percent Fe). All operations are done at high current density and with intense agitation (with the exception of electropolishing). The advantages of such conditions are pointed out. Note is made of the harmful effect of iron oxidation in the electrolyte for the deposition of permalloy and of the necessity for complete hermetic sealing of the tank.

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2/2 006 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0121308
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE APPLICABILITY OF THE
EXPERIENCE WITH NA SILICATES IN THE MEAT INDUSTRY ARE BRIEFLY REVIEWED.
SEVERAL PRACTICAL EXAMPLES ARE GIVEN. FACILITY: MUSK.
MYASOKOMB., MOSCOW, USSR.

UNCLASSIFIED

1/2 006 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--EXPERIMENTAL USE OF SODIUM SILICATES IN FOODS -U-
AUTHOR-(02)-ALEKSEYEV, N., STEFANOV, A. A
COUNTRY OF INFO--USSR
SOURCE--MYAS. IND. SSSR 1970, 41(1), 33-4
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--SODIUM SILICATE, FOOD INDUSTRY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1998/0641 STEP NO--UR/9086/70/041/001/0033/0034
CIRC ACCESSION NO--AP0121308
UNCLASSIFIED

USSR

ALEKSEYEV, M. A., BABUEV, B. F., KUZ'MINSKIY, V. A.

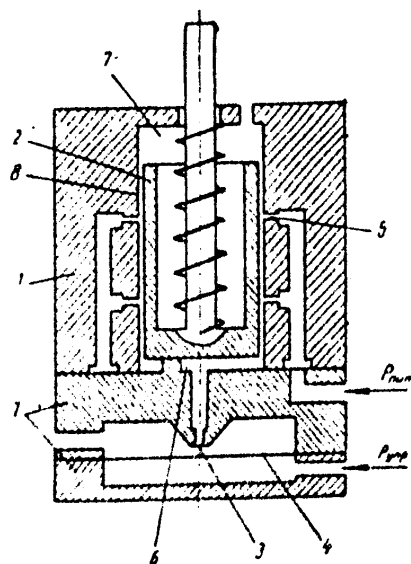
"The Stability of the Laminar Boundary Layer with Supersonic Flow Velocities"

Uch. Zar. Tsentr. Aerogidrodinam., In-ta., [Scientific Writings of the Central Aerohydrodynamic Institute], 1971, 2, No 3, pp 33-41. (Translated from Referativnyy Zhurnal Mekhanika, No 1, 1972, Abstract No 1B779 from the resume).

Translation: The critical values of surface temperature and velocity of air suction distributed over the surface, corresponding to full stabilization of flow in a laminar boundary layer for small, two dimensional perturbations are calculated for the self-similar solutions of the equations of a compressible laminar boundary layer, similar to the solutions of Faullner and Scan for an incompressible fluid.

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AA0043298



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19761493

AA0043298

L.V. ALEKSEYEV

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

1/70

240330 PNEUMATIC CONVERTER to amplify a pneumatic signal and convert it to a linear movement uses a frictionless piston which floats on air from nozzles in the periphery. The control signal deflects a diaphragm which closes an exhaust port so that the piston is lifted upwards by the supply air pressure.

11.1.68 as 1209254/18-24. L.V. ALEKSEEV (20.8.69)
Bul 12/21.3.69. Class 42m². Int.Cl. G 06d.

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19761492

USSR

ALEKSEYEV, L. V., Izvestiya vysshikh uchebnykh zavedeniy--Radioelektronika, Vol XIV, No 8, 1971, pp 910-918

parameters of the X-circulator assume a form showing the impossibility of only one matching of the input impedances of the Y-circulators if the X-circulator is to be obtained the characteristics of which approach ideal to a given degree. It is always possible to obtain an X-circulator the characteristics of which are as close as one might like to ideal by the matching technique, but the characteristics of the Y-circulators making it up must be good.

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USSR

UDC 621.372.62

ALEXSEYEV, L. V.

"Analysis of the Operation of an X-Circulator"

Kiev, Izvestiya vysshikh uchebnykh zavedeniy--Radioelektronika, Vol XIV, No 8, 1971, pp 910-918

Abstract: The relations between the moduli of the scattering matrix parameters of an X-circulator and the Y-circulators entering into it were established, and the restrictions imposed by these relations on the system characteristics were determined. A study was made of an X-circulator comprising two symmetric and identical Y-circulators joined by a reactive mutual quadripole. An X-circulator of this type is characterized by six complex parameters of the scattering matrix. The relations between the moduli of these parameters and the moduli of the matrix parameters of the Y-circulators were obtained and analyzed. The application of the results obtained when designing X-circulators is illustrated by two examples. For ideal Y-circulators, the investigated parameters of the X-circulator are constant independently of the properties of the connecting quadripole. If the Y-circulators are nonideal, then with complete matching of their input impedances by means of the quadripole the limiting values of the

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Water Treatment

USSR

UDC 628.16.048:628.162/74

YEGOROV, A. I., and ALEKSEYEV, L. S., All Union Scientific Research Institute
Vodego

"Chemosorption of Carbon Dioxide During Filtrational Stabilization of Distilled
Water"

Moscow, Vodoznabzheniye i Sanitarnaya Tekhnika, No 3, 1973, pp 5-7

Abstract: Results are reported on the interaction of carbon dioxide with calcium carbonate under dynamic conditions of the stabilization of distillate on the models of marble filters. Experimental data show that with CO_2 concentration greater than 1.1 mg-equivalent/liter, the chemosorption process is of zero order, with the constant $K_0 = 0.75$ mg-equivalent/l·min; when the CO_2 concentration is less than or equal to 0.33 mg-equivalent/liter, the process is of the first order, and $K_1 = 1.99$ l/min.

USSR

ALEKSEYEV, L. A., et al, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 34, No 5, May 70, pp 955-956

were measured and graphed. The graph shows that the mean-square displacements of the nuclei of iron atoms in the a- and d-positions differ by more than 10%, indicating a considerable difference in the binding forces in sublattices of ferrite garnets. The dependence of θ on temperature demonstrates the inapplicability of the harmonic approximation for ferrites at temperatures above T_C . The ratio $d \ln \theta / dT$ is taken as a measure of anharmonicity; it increases sharply above T_C and appears more strongly in the octahedral positions. The anharmonicity disappears close to T_C .

USSR

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ALEKSEYEV, L. A., GRUZIN, P. L., and USPENSKIY, M. N., Moscow Engineering Physics
Institute

"Determining Mean-Square Displacements of Nuclei of Fe^{57} Atoms in Octahedral
and Tetrahedral Positions of Iron-Yttrium Garnet Above T_C by the Nuclear Gamma
Resonance Method"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 34, No 5, May 70,
pp 955-956

Abstract: The mean-square displacements of nuclei of iron atoms were determined
for the first time from the dependence of the probability of the Mossbauer
effect on temperature; also determined were the effective characteristic tempera-
tures θ for iron in octahedral and tetrahedral positions of iron-yttrium garnet
above the Curie temperature ($T_C = 548^\circ\text{K}$). This garnet was selected, since the
ratio of the number of iron ions in the a- and d-positions is known (2:3), thus
making it possible to make absolute measurements of these quantities. The values
of the characteristic temperature θ for iron atoms in the a- and d-positions
and also the values $(\bar{x}^2)^{1/2}$ for the nuclei of the iron atoms in these positions
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USSR

UDC 619:616.981.42+616.982.2-084:636.22/.28

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YERMAKOV, P. I., ALEKSANDROV, N. A., AFANAS'YEV, V. M., ~~ALEKSEYEV, K. K.,~~ and IKONNIKOV, V. D., Saratov Oblast Veterinary Department

"Organization of Measures to Control Brucellosis and Tuberculosis in Cattle"

Moscow, Veterinariya, No 1, 1972, pp 46-48

Abstract: The incidence of tuberculosis and brucellosis among cattle and the incidence of brucellosis among sheep in Saratovskaya Oblast (a region of south-eastern Russia on both sides of the lower Volga) built up by 1964 to the point where almost one-quarter of all the animals were suffering from chronic infection. Following a detailed study of the situation on each affected farm, comprehensive plans were drawn up to halt the spread of the diseases. These plans included regular examination of the animals for brucellosis and tuberculosis, isolation of young healthy animals to create new herds, compulsory pasteurization of milk, disinfection measures, and plowing up and liming soils on infected farms. Conference and visiting experts were organized to propagandize modern control measures. As a result of these steps, the number of affected localities was sharply reduced within five years (fourfold and twofold in the case of brucellosis and tuberculosis, respectively). The infection rate of both diseases dropped from about 2.3 to 1.1%. Efforts are now under way to eradicate these and other chronic diseases of cattle.

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USSR

PETROV, B. N., et al., Doklady Akademii Nauk SSSR, Vol 192, No 6, 21 Jun 70, pp 1235-1238

the magnitude and sign of the resulting angle of rotation and to form the controlling moments about the connected axes. One can then provide either the minimum time for the turning maneuver or the minimum expenditure of work in a given time.

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USSR

UDC 62.501.12

PETROV, B. N., Academician, BODNER, V. A., and ALEKSEYEV, K. B.

"Analytical Solution of the Problem of the Control of a Spatial Turning Maneuver"

Moscow, Doklady Akademii Nauk SSSR, Vol 192, No 6, 21 Jun 70, pp 1235-1238

Abstract: Control of the orientation of flying objects by means of a single rotation around a certain axis is said to exhibit the best potential possibilities as compared with the three consecutive turns relative to orthogonal axes connected with the object, as are ordinarily used. An analytical solution is given for the problem of the synthesis of an algorithm for orientation control. The principle of extensive control is applied: this consists of selecting a vector of the controlling moment of limited magnitude $M = \|M_1, M_2, M_3\|^T$ with the condition of motion of the object relative to a given axis acted upon by components of the moment M_i with respect to the connected axes of the object. Expressions are given for the moment with respect to the axes of the object that provide rotation in minimum time about a certain axis e_i and for the work expended on control. It is noted that this algorithm for optimal extensive control requires an onboard computer to determine the direction of the axis of rotation, and 1/2

USSR

UDC 629.78.062.2

ALEKSEYEV, K. B., BULEKOVA, N. M., and CHESNOKOV, A. G.

"Investigation of Routine Extensive Control of a Turning Maneuver"

Inform. Materialy. Nauch. Sovet po Kompleks. Probl. (Information Materials of the Scientific Council on Complex Problems). "Kibernetika." AN SSSR, No 6 (53), 1972, pp 59-68 (from Referativnyy Zhurnal, Raketostroyeniye, No 5, 1972, Abstract No 5.41.128 by T. A. Ye.)

Translation: An efficient method of controlling a turning maneuver is extensive control, in which selection of the controlling moments that are applied to the space vehicle along the body axes is performed on the basis of the condition of reotation of the space vehicle along the Euler axis. Consideration is given to the possibility of realizing this condition with the use of flywheels as the actuating devices of the engine orientation system. Included in the investigation is a derivation of the differential equation of motion of the space vehicle, and its solution. 2 references.

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USSR

UDC 629.77.062.2

ALEKSEYEV, K. B., BULEKOVA, N. M., and VASIL'YEV, V. N.

"System of Extensive Control of a Rotating Solid With a Spherical Flywheel"

Tr. Mosk. aviats. In-ta (Works of the Moscow Aviation Institute), No 240, 1972, pp 127-133 (from Referativnyy Zhurnal--Raketostroyeniye, No 5, May 73, Abstract No 5.41.235 by the authors)

Abstract: In the varied technical resources providing creation in internal moments for control of the rotational movements of a solid, the spherical flywheel possesses vast potential possibilities. However, its use in control systems with angular movements of a solid have been associated with considerable difficulties. The power and weight gain factors which give the flywheel, in the essential method of control, angular motions of the solid, do not compensate for the difficulties of its structural development. Development of a method of extensive control makes it possible to evaluate the advantages of the flywheel, but only from the positions of the theory and practice of automatic systems using computers. And it was not excluded that for such a method of control the realization of the mentioned possibilities of the flywheel receives sufficient validation. The present investigation is devoted to theoretical problems of extensive control by means of a flywheel and should yield practical conclusions on the technical content of the problem. 3 figures, 4 tables.

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USSR

UDC 629.78.05-52

BODNER, V. A., ALEKSEYEV, K. B., and UBARSHIY, I. S.

"Synthesis of the Programmed Extensional Control of a Space Turning Maneuver"

Kazan', Izvestiya Vysshikh Uchebnykh Zavedeniy, Aviatcionnaya Tekhnika, No 2, 1973, pp 5-11

Abstract: The synthesis of the system of the programmed extensional control is analyzed on the basis of Pontryagin's maximum principle. The differential equations of the rotary motion of a cosmic apparatus, supplemented by boundary conditions, are used in the synthesis. The analyzed problem of the latter consists in the determination of the temporal program of the change of moments applied to the apparatus along bounded axes and ensuring the realization of the prescribed turning maneuver within the minimum possible time. Expressions are derived providing a clear presentation of the changing character of the control moments in time and determining the energy input. The extensional and standard control systems are compared. The calculation method is illustrated on an example. Twelve formulas, two bibliographic references.

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USSR

UDC: 629.78.05-52

BODNER, V. A., ALEKSEYEV, K. B., and ZBARSKIY, I. S.

"Theory of the Extensive Control of Orientation"

Kazan' Izvestiya Vysshikh Uchebnykh Zavedeniy, Aviatsionnaya Tekhnika, No 1, 1973, pp 5-11

Abstract: The authors study a method for changing the orientation of an aircraft by means of a single turn about a Euler axis. Kinematic relationships are given which are used in selecting the control moments necessary for the rotation of the craft. Differential equations are derived for the craft motion which characterize its dynamic properties during extensive control. It is a second order differential equation with its right side being a known time function.

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USSR

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531.787:621.643.44

ALEKSEYEV, K. A.

"Electrical Insulating Seal for Conical High Pressure Electric Leads"

Tr. Metrol. In-Tov SSSR, Vyp. 104(164), [Works of Metrological Institutes of USSR, No. 104(164)], p 169 (translated from Referativnyy Zhurnal Metrologiya I Izmeritel'naya Tekhnika, No. 4, 1970, Abstract No. 4.32.722, unsigned)

Translation: A special paint consisting of iron oxide and cellulose nitrate varnish is described, designed to be used as an electric insulating seal for conical high pressure electric leads. The paint has high electric insulating properties and assures electric lead reliability. Usage of this paint greatly simplifies assembly and disassembly of electric leads. One biblio. ref.

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USSR

531.787

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ALEKSEYEV, K. A., KHOKHULYA, YU. P.

"Manganin Manometer for Measurement of Static Pressures up to 20,000 kg/cm²"

Tr. Metrol. In-Tov SSSR, Vyp. 104(164), [Works of Metrological Institutes of USSR, No. 104(164)], pp 40-43 (translated from Referativnyy Zhurnal Metrologiya I Izmeritel'naya Tekhnika, No. 4, 1970, Abstract No. 4.32.716 by M. I. M.)

Translation: The first laboratory device based on the measurement of the resistance of manganin transducers as a function of pressure with direct reading of pressure from the scale of the electrical measuring device is described. The manganin manometer has four measurement limits: 0-5,000; 5,000-10,000; 10,000-15,000 and 0-20,000 kg/cm². The first three scales are designed for precise measurement of pressures (measurement error not over ± 50 kg/cm²), while the fourth scale is designed for coarser measurement of pressure (measurement error not over ± 200 kg/cm²). The electrical resistance of the manganin manometer coil as a function of pressure is determined in advance using a standard piston manometer. The dimensions of the device are 400 x 300 x 250 mm, weight 9 kg. Three illustrations, one biblio. ref.

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2/2 024

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AN0113050

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE DISCUSSED THE ROLE PLAYED BY STUDENTS AT UNIVERSITY LABORATORIES, CHAIRS AND PLANTS. THE SPECIFIC EXAMPLES ARE GIVEN FROM THE PRACTICES OF THE MOSCOW CHEMICAL TECHNOLOGICAL INSTITUTE IMENI MENDELEYEV. THE INSTITUTE'S VICE PRESIDENT, PROFESSOR BORIS IVANOVICH STEPANOV, STRESSES THE IMPORTANCE OF FIELD WORK FOR THE STUDENTS. PROFESSOR GLEB NIKOLAYEVICH MAKAROV CITES THE CASE WHEN STUDENTS OF THE INSTITUTE DEVELOPED A CONTINUOUS COKE OVEN FOR THE NIZHNIY TAGIL COKE CHEMICAL PLANT. THE PROJECT WAS ASSISTED BY FUAT AKHTYAMOVICH MUSTAFIN, CHIEF ENGINEER OF THE PLANT. ACCORDING TO PROFESSOR NIKOLAY MIKHEYEVICH PAVLUSHKIN, STUDENTS ARE ALSO PARTICIPATING IN SITALL, SOVIET VERSION OF PYROCERAM, RESEARCH CARRIED JOINTLY WITH THE NIIAVTOSTEKLO. DMITRIY FEDOSEYEVICH KUTEPOV REVEALED THAT THE CHAIR FOR PLASTICS TECHNOLOGY HAS DEVELOPED HIGH TEMPERATURE POLYMERS FOR THE SHIPBUILDING INDUSTRY. IT HAS ALSO DEVELOPED, IN COLLABORATION WITH THE ACADEMY OF CITY UTILITIES, AKADEMIYA KOMMUNAL, NOGO KHOZYAYSTVA, A MATERIAL FOR PROTECTING UNDERGROUND PIPE LINES. PROFESSOR NIKOLAY NIKOLAYEVICH SUVOROV MENTIONED THE DEVELOPMENT OF NEW GROWTH STIMULATORS. ACCORDING TO SERGEY VALIL, YEVICH KEFTANOV, INSTITUTE'S PRESIDENT, THE INSTITUTE HAS CONTRACTED 80 RESEARCH PROJECTS FOR 1970. 40 OF THESE HAVE BEEN COMPLETED. THE ARTICLE ALSO MENTIONS DOCENT YURIY ALEKSANDROVICH STREPIKHEYEV.

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--SCIENCE GIVES THE EXAM -U-
AUTHOR--ALEKSEYEV, K. A
COUNTRY OF INFO--USSR
SOURCE--PRAVDA, JUNE 28, 1970, P 3, COLS 1-4
DATE PUBLISHED--28JUN70

SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES, CHEMISTRY, MATERIALS,
BIOLOGICAL AND MEDICAL SCIENCES, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--CERAMIC MATERIAL, COKE, PIPELINE TRANSPORTATION SYSTEM,
PROTECTIVE COATING, PLANT GROWTH REGULATOR, HEAT RESISTANCE PLASTIC,
EDUCATION INSTITUTE, SHIPBUILDING ENGINEERING, HIGHER EDUCATIONAL
INSTITUTE R AND D

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1993/0069

STEP NO--UR/9012/70/000/000/0003/0003

CIRC ACCESSION NO--AN0113050

UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0127588

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE GAS ELECTRON DIFFRACTION STUDIES OF THE STRUCTURE OF MOL. CONTG. ATOMS WITH A LARGE DIFFERENCE IN AT. NOS. (FOR EXAMPLE, BR SUB3 GEMN(CO)SUB5 OR (C SUB5 H SUB5)SUB2 ZRCL SUB2) IT WAS NECESSARY TO ACCOUNT FOR SCATTERING NOT ONLY ON THE NUCLEI BUT ALSO ON THE ELECTRON SHELLS. THIS INVOLVES SEVERAL EQUATIONS FOR CALCG. THE SCATTERING INTENSITY OF THE MOL. AND AT. COMPONENTS, THE INCOHERENT SCATTERING INTENSITY, AND THE NONNUCLEAR SCATTERING.

FACILITY: INST. ELEMENTUORG. SOEDIN., MOSCOW, USSR.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--CALCULATION OF NONNUCLEAR SCATTERING IN A BORN APPROXIMATION -U-
AUTHOR-(03)-GAPOTCHENKO, N.I., ALEKSEYEV, I.V., RONOVA, I.A.
COUNTRY OF INFO--USSR
SOURCE--ZH. STRUKT. KRIM. 1970, 11(1), 131-4 A
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS, CHEMISTRY
TOPIC TAGS--ELECTRON DIFFRACTION, MOLECULAR STRUCTURE, ELECTRON
SCATTERING, COULOMB SCATTERING, ELECTRON SHELL STRUCTURE, CALCULATION,
ORGANIZIRCONIUM COMPOUND, ZIRCONIUM CHLORIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PRUXY REEL/FRAE--3001/2226 STEP NO--UR/0192/70/011/001/0131/1034
CIRC ACCESSION NO--AP0127588
UNCLASSIFIED

USSR

UDC 615.285.7.017:615.277.4

ANDRIANOVA, M. M., and ALEKSYEV, I. V., Laboratory of Carcinogens, Institute of Nutrition, Academy of Medical Sciences USSR, Moscow

"Carcinogenic Properties of the Pesticides Sevin, Maneb, Ziram, and Zineb"

Moscow, Voprosy Pitaniya, No 6, 1970, pp 71-74

Abstract: Nonpurebred rats were fed seven (30 mg/kg), maneb (335 mg/kg), ziram (70 mg/kg), or zineb (285 mg/kg). Other rats received subcutaneous implants of the pesticides (20 mg of sevin, 12.5 mg of maneb, 15 mg of ziram, or 20 mg of zineb). Among the animals still alive after 22 months, malignant tumors were found in 6 of 22 that received sevin (4 orally and 2 subcutaneously), 5 of 10 that received maneb (2 orally and 3 subcutaneously), 7 of 20 that received ziram (4 orally and 3 subcutaneously), and 6 of 16 that received zineb (2 orally and 4 subcutaneously). Only 1 of the surviving 46 control rats developed a tumor. The pesticides evidently possess systemic action, for the tumors appeared in a variety of organs (but never at the injection site).

1/1

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30. NNA Technical Translation QJ001
Part II F-604
May 1962

APPLICATION OF CORRELATION ANALYSIS FOR DIAGNOSIS OF THE CONDITION OF MECHANISMS

1/16

I. V. Alekseyev and V. P. Pyshkina (Moscow)

Knowledge of such oscillating characteristics of parts of mechanisms as

the damping factor, natural frequency and spectral noise power density is of interest for purposes of acoustical diagnosis.

In order to determine these characteristics and estimate the influence of design parameters of parts on the process of noise formation, the Department of Engines of the Moscow Highway Institute has produced a motorless modeling installation, a block diagram of which is shown on Figure 1. This installation, using a correlator produced in Department 1-9 of the Bauman Moscow Higher Technical School, has been used to determine the characteristics of individual parts mentioned above.

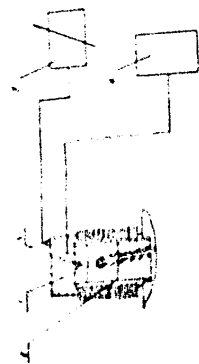


Figure 1.

mm; 5.05 ± 0.05 mm, and 6 ± 0.05 mm, and were made of type 45 and 18Kh steels. The selection of a design for a thin wall head was based on the following considerations:

- The end wall of the head is made so that its rigidity is much less than the rigidity of the remaining elements of the design of the installation, allowing the assumption that the primary share of acoustical energy radiated by the cover is determined by oscillations of its thin wall portion.
- The design of the head allows analytic calculation of the natural frequency of its radiating surface, making it possible to evaluate the reliability of the experimental data.

ALEKSEYEV, I. V.

2/2 CC9

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0131244

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LAB. EXPTS., VERIFIED AT THE INDUSTRIAL SCALE, REVEALED THAT ADDN. OF CUSO4 SUB4 AT CONCNS. CORRESPONDING TO 4-7 MG-100 G MOLASSES RESULTED IN BETTER FERMENTATIVE CONVERSION OF THE LATTER TO CITRIC ACID (4-23PERCENT HIGHER YIELDS) BY *ASPERGILLUS NIGER* (SURFACE CULTURE).

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--EFFECT OF COPPER ON THE FERMENTATIVE CONVERSION OF MOLASSES TO
CITRIC ACID -U-
AUTHOR--(05)-FEDOSEYEV, V.P., ALEKSEYEV, I.N., KOROTCHENKO, A.V.,
KULBASKIKOVA, A.N., SVIRIDOVA, T.V. A
COUNTRY OF INFO--USSR
SOURCE--KHELBOPK. KONDITER. PROM. 1970, 14(1), 33-5
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--SUCROSE, FERMENTATION, ASPERGILLUS, CITRIC ACID, COPPER
SULFATE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3004/0639 STEP NO--UR/0344/70/014/001/0033/0035
CIRC ACCESSION NO--AP0131244
UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AA0130101

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A FLUX WITH A LOWER M.P. THAT IMPROVES THE QUALITY OF THE BEADED METAL HAS THE FOLLOWING COMPN.: NA SILICATE 18022, H SUB3 BO SUB3 58-67, SILICOCALCIUM 15-20PERCENT. FACILITY: OKTYABR'SKAYA REVOLYUTSIYA, PLANT OF AGRICULTURAL EQUIPMENT CONSTRUCTION, ODESSA.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--FLUX FOR WELD DEPOSITING HARD ALLOYS WITH HIGH FREQUENCY CURRENTS
-U-
AUTHOR--(05)-LIPTUGA, I.V., ALAKSEYEV, I.L., CHEREPNEV, D.A., DRIVYKH,
N.A., TYUTYUNZHI, A.S.
COUNTRY OF INFO--USSR

A
SOURCE--U.S.S.R. 265,690
REFERENCE--OTKRYTIYA, IZOBRET., PRGM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--09MAR70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--WELDING FLUX, WELDING TECHNOLOGY, HARD ALLOY, METAL DEPOSITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/1066

STEP NO--UR/0492/70/000/000/0000/0000

CIRC ACCESSION NO--AA0130101
UNCLASSIFIED

USSR

TROITSKIY, A. A., et al, Teploenergetika, No 4, Apr 71, pp 4-6

Scientific research and planning for artificial cooling systems including towers with 65-100 m³/hr capacity (one tower for an 800-1200 Mw unit) are being stepped up. Methods are being sought for more economically effective methods of enriching fuels and cleaning stack gases of ash and sulphur dioxide. It is noted that by enlarging power units and power stations the number of staff personnel can be reduced 60%. Also the transition to larger power units and stations can reduce the cost of electrical power. Along with the construction of electric power stations using organic fuel, the advantageous development of nuclear power stations is noted. Gas-turbine power installations up to 100 Mw which incorporate simple design, high maneuverability, and quick starting, and with a capital investment less than two times that of steam turbine units will be used to supplement peak load periods. After 1980 large power magnetohydrodynamic generators with high-temperature superstructures combined with thermal power installations may be expected; the efficiency of such systems is expected to be 50-55%.

- END -

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6022

CSO: 1860 W

USSR

UDC: 621.4.001.12

TROITSKIY, A. A., ALEKSEYEV, I. A., IODIDIO, E. A.

"Main Trends In Thermal Power Engineering"

Moscow, Teploenergetika, No 4, Apr 71, pp 4-6

Abstract: In the current decade the construction of a number of large condensation thermal power stations with power units on the order of 500, 800, 1200 Mw, and also heat-and-electric power plants with power units up to 250 Mw are planned. The transition to the construction of superpower heat-and-electric power stations with the installation of especially large units must depend upon technical solutions which provide for a decrease in the unit cost of equipment, construction-assembly costs, expense of generating electrical power, and an increase in labor productivity. At the beginning of the next decade, the United European Power System will join in the parallel work of installing approximately 200 million kw of power. According to the specifications of its development in the period up to 1985, the construction of heat-and-electric power plants with 6 million kw and more power will be possible. According to plans the power of individual electric power stations in Siberia using inexpensive coal and electric power transmission lines of 1500 kv and higher will comprise approximately 10 million kw.

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USSR

TROITSKIY, A. A., et al., Teploenergetika, Russian, No 5, 1971, pp 4-10

groups of basic equipment and also to develop and introduce new types of auxiliary equipment and new arrangements of the main building. The necessary refinement in the assignments for equipment development for series gas-oil units have already been introduced to a large extent, and they will be brought into further accord with the manufacturing plant as a result of investigation of the work of the All-Union State Institute for the Planning of Electrical Equipment for Heat Engineering Structures by the Technical Council of the USSR Ministry of Power Engineering. Further improvement of the indexes of condensation electric power plants can be achieved by improving the heat economy of the turbine, lowering the calculated hydraulic and aerodynamic drag of the boiler and the high-pressure heater and improving the efficiency of the auxiliary machinery. The conclusions drawn with respect to composition and technical specifications are based on both Soviet and foreign experience.

2/2

Power

USSR

UDC 621.311.22/.23.001.12

TROITSKIY, A. A., ALEKSEYEV, I. A., IODIDIO, E. A., Engineers

"Planning and Designing High-Power Condensation Electric Power Plants"

Moscow, Teploenergetika, Russian, No 5, 1971, pp 4-10

Abstract: A study is made of the problems of planning and designing high-power condensation electric power plants. The selection of the optimal power of individual units and the condensation electric power plant itself, the equipment of the main building, the arrangement of the equipment and the technical-economic indexes of condensation electric power plants are discussed. Layouts of the plant itself as well as schematics of individual units and technical specifications for the plants and units are presented.

Considering the proposed new technical solution, the construction of condensation electric power plants with 800 megawatt units operating on gas and fuel oil will make it possible to reduce the specific heat consumption by 4-5% and the specific capital investments by 10-15% as compared to condensation electric power plants equipped with 300 megawatt units. In order to attain these economic effects, it is necessary to redevelop or modernize individual

1/2

USSR UDC 621.385.832.032.36.002.237(088.8)-(47):621.397,62:621.397.132

ALEKSEYEV, I. A., ZHUKOVSKAYA, E. I., GLINKA, A. P., MOROZOVA, A. V., and RUMYANTSEVA, T. Ya.

"Luminous Coating for Screens of Cathode-Ray Tubes"

USSR Author's Certificate No 275240, filed 7 Mar 69, published 18 Nov 70 (from RZh-Elektronika i yeye primeneniye, No 7, July 1971, Abstract No 7A284P)

Translation: The proposed luminophor covering consists of 2-component ($V_3Al_5O_{12}Ce$ --60--70 percent, $Sr_2(PO_4)_2 \cdot Eu$ --30--40 percent) or 3-component ($V_3Al_5O_{12} \cdot Ce$ --60 to 70 percent, $Sr_2(PO_4)_2 \cdot Eu$ --20 to 15 percent, V_2SiO_5Ce --20 to 15 percent) mixture of luminophors. The high efficiency and short time of afterglow, amounting to 0.15--0.20 microsecond at a level of five percent from the brightness at the moment of cessation of excitation, makes it possible to increase the signal-to-noise ratio in all the color channels of a television picture tube and to improve the quality of the image. The method of precipitation in water of a solution of a silicate of K and $Sr(NO_3)_2$ is used for deposition of the luminophor covering.

USSR

UDC: 621.385.832.032.36

ALEKSEYEV, I. A., ZHUKOVSKAYA, E. I., GLINKA, A. P., MOROZOVA, A. V., RUMYANTSEVA, T. Ya.

"A Luminescent Coating for the Screens of Cathode Ray Tubes"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 22, 1970, Soviet Patent No 275240, Class 21, filed 7 Mar 69, p 58

Abstract: This Author's Certificate introduces: 1. A luminescent coating for the screens of cathode ray tubes based on cerium-activated yttrium aluminate $Y_3Al_5O_{12} \cdot Ce$. As a distinguishing feature of the patent, the effectiveness of screen emission in the blue region of the spectrum is improved and the time of afterglow is reduced by introducing the phosphor $Sr_3(PO_4)_2 \cdot Eu$ into the composition of the coating. 2. A modification of this coating distinguished by the fact that color saturation is increased by additional introduction of the phosphor $Y_2SiO_5 \cdot Ce$. 3. A modification of coating No 1 distinguished by the fact that its ingredients are taken in the following proportions (in percent by weight): $Y_3Al_5O_{12} \cdot Ce$ --60-70; $Sr_3(PO_4)_2 \cdot Eu$ --30-40. 4. A modification of coating No 2 distinguished by the fact that the ingredients are taken in the following proportions (in percent by weight): $Y_3Al_5O_{12} \cdot Ce$ --60-70; $Sr_3(PO_4)_2 \cdot Eu$ --20-15; $Y_2SiO_5 \cdot Ce$ --20-15.

1/1

2/2 021 UNCLASSIFIED PROCESSING DATE--16OCT70
CIRC ACCESSION NO--AP0119148
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANALYSIS OF THE SIGNAL SHAPE OF A
FREE NUCLEAR PRECESSION SENSOR WITH A ROTATING SAMPLE, IN THE CASE OF
MEASUREMENTS PERFORMED IN A NONUNIFORM MAGNETIC FIELD. THE CONDITIONS
UNDER WHICH THE SIGNAL IS NOT FREQUENCY MODULATED AND ITS AMPLITUDE
EXPERIENCES ONLY NATURAL DAMPING ARE DETERMINED. POSSIBLE APPLICATIONS
OF THE SENSOR IN GEOMAGNETIC MEASUREMENTS ARE EXAMINED.
FACILITY: AKADEMIIA NAUK SSSR, INSTITUT ZEMNOGO MAGNETIZMA, IONOSPHERY I
RASPROSTRANENIIA RADIOVOLN, LENINGRAD, USSR.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--1600T70
TITLE--FREE NUCLEAR PRECESSION SENSOR WITH A ROTATING SAMPLE, PERFORMING
MEASUREMENTS IN A NONUNIFORM MAGNETIC FIELD -U-
AUTHOR-(02)-ROSSHTEYN, A.YA., ALEKSEYEV, G.V.

COUNTRY OF INFO--USSR

SOURCE--GEOMAGNETIZM I AERONOMIYA, VOL. 10, NO. 2, 1970, P. 320-325

DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--MAGNETIC FIELD, SIGNAL SHAPE, GEOMAGNETIC MEASUREMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0152

STEP NO--UR/0203/70/010/002/0320/0325

CIRC ACCESSION NO--AP0119148

UNCLASSIFIED

USSR

ALEKSEYEV, G. V., et al., Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, Vol XV, No 2, 1972, pp 300-210

a broad wave range and for the various mentioned surfaces. The results of recalculating $\theta_{\text{backscatter}}$ in the mean square value of the angle of inclination $\beta_{\text{mean square}}$ are close to the data obtained by the optical method. The demonstrated characteristic nonstationarity of the echo has a significant effect on the shape of the experimental distributions. The method of synchronous processing permits consideration of the mentioned characteristic. The experimentally determined distributions confirmed the theoretical principles of signal structure and they permitted determination of the level of the reflected component as a function of the radiation frequency and type of reflecting surface.

USSR

UDC 621.371.332.4

ALEKSEYEV, G. V., VOLKOVSKIY, S. A., ZHUKOVSKIY, A. P., ONOPRIYENKO, E. I.,
TROFIMOV, V. D., Moscow Aviation Institute

"Experimental Studies of the Effective Backscattering Pattern Width of Surfaces
and the Distribution of Reflected Signals in the Meter and Decimeter Wave Ranges"

Gor'kiy, Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, Vol XV, No 2,
1972, pp 200-210

Abstract: A study was made of a procedure for determining the backscatter pattern of a surface using the doppler effect. Results are presented from experimental studies in the waverange from 11 cm to 2 meters above different types of surfaces (the sea, plowedfields, forest and sand dunes). Results are presented also from measuring the ratios of the levels of the reflected and scattered components of the echo on the basis of the distribution laws obtained. The possibility of remote determination of the statistical characteristics of the surface is indicated.

In practice, experimental determinations of the effective width of the backscatter pattern on the basis of the doppler effect considering possible modulation of the sounding signal are possible. Experimental values of $\theta_{\text{backscatter}}$ [the effective width of the backscatter pattern] are presented in 1/2

ALEKSEYEV, G. V.

UDC 550.81.002.56

ADJUSTMENT OF QUANTUM MAGNETOMETERS WHEN MEASURING GEOMAGNETIC COMPONENTS

[Article by A. Ya. Rotshfeyn and G. V. Alekseyev; Leningrad, Geofizicheskaya Apparatura, Russian, No. 5, 1971, pp 38-44.]

When measuring components of the Earth's magnetic field by means of quantum magnetometers, the auxiliary field H_k should be oriented exactly along the vertical line or in a direction perpendicular to it, depending on the measured component. For this purpose, it is necessary to have in the device construction a certain basic axis along which, or along a direction perpendicular to it, the magnetic axis of the auxiliary magnetic system may be easily established. The direction of the axis of revolution OQ_1 of the magnetic system structure (Fig. 1) may serve as such a basic direction. The angle α between the magnetic axis of the rings and the direction of the vertical line may be represented as a sum of two angles: $\alpha = \theta + \eta$, where θ is the angle between OQ and the axis of revolution OQ_1 , and η is the angle between the direction of the ring field H_k and the axis of revolution OQ_1 or a perpendicular to it.

The angle θ may be reduced to a minimum by the use of gravitational angle indicators: liquid levels, quartz inclinometers, etc. For exact adjustment of angle η , it is necessary to have an indicator-discriminator for the magnetic axis' angular position, in which capacity quantum-sensitive elements with high resolving power may serve.

The Terminology corresponds to that accepted in the literature, for example in the paper by N. M. Pomerantsev, V. M. Ryukov, and G. V. Skrotskii: "Kvantovaya magnetometriya" (Quantum Magnetometry). In the collected work Geofiz. Apparatura (Geophysical Equipment), Issue 33, 34, L., Nedra, 1967.

SPR 56099
25 May 72

ALEKSEYEV, G. V.

UDC 550.83.08

ABSOLUTE MARINE COMPONENT MAGNETOMETER

[Article by G. V. Alekseyev, S. P. Bokalinskii, A. Ya. Reishnaga, and R. M. Tsufskanov; Leningrad, Geofizicheskaya Apparatura, Russian, Vol 47, 1971, pp 35-40.]

During the continual geomagnetic measurements in the waters of seas and oceans performed from the nonmagnetic vessel Zarya, the errors in measuring the components and modulus of the Geomagnetic field were: $\Delta H = \pm 2\%$, $\Delta I = \pm 100\%$, $\Delta T = \pm 40\%$. The difference in the measurements is caused by the fact that the relatively continual measurements of T by means of a ferrosunder magnetometer were controlled by the nuclear-precessional one, while for control of the H component, a dual compass was used, the mean error of which during relatively quiet weather was $\Delta H = \pm 100$ [Ivanov, 1966].

In 1967 a marine component quantum magnetometer was developed and constructed by the Leningrad branch of IZMIRAN [Institute of Terrestrial Magnetism, the Ionosphere and Radio Wave Propagation of the USSR Academy of Sciences] jointly with IZMIRAN Special Design Bureau, in which a self-oscillating cesium sensor of the T magnetometer was applied [Kozlov, 1965]. During measurements from the moving vessel, the component magnetometer was placed on a gyrovertical device.

For reducing the deviation caused by the ferromagnetic masses of the gyrovertical device, magnetometer sensor (Fig. 1), with compensating rings 2, is removed the maximum possible distance from them with the aid of a shaft, 4, 0.9 meter long. The shaft is placed in two bearings in a cylindrical casing 3, fixed directly to the external gimbal 6 of the four-gyroscope gyrovertical device of the G2 type. The optical axis of the sensor is directed at an angle of 45° to the shaft revolution axis. A controlling device 3 permits compensating rings to rotate in two mutually orthogonal

- 66 -

JFRS 56099
25 May 72

2000.000

At the Reshina (1960) we proposed a method for stationary observation of a stationary external field (of the order of 10^4 G) in analogy with the method of continuous observation, which is based on the recording of a stationary signal from a stationary source of a stationary external field. A detailed description of our method of stationary observation of the external field of an indirect magnetization of the α phase of the Fe_2O_3 garnet and the results obtained in the experiments on the measurement of the magnetic field of the garnet, the composition of the garnet and field of the garnet, the

A fine New York edition of the *Journal* has appeared, and the first number of the *Journal* has been published. The *Journal* is published by the New York Public Library, and is a valuable source of information for the study of the history of the city of New York.

where γ and H_1 are the fields which have a comparable effect upon the components (in the given case X and Y). The H_1 are the integrated effect of a field H_0 of duration τ_0 and γ_0 of duration along H_A and H_0 .

Designating $\Delta X = X - H_0$, $\Delta Y = Y - H_0$, we shall write an expression for the total field:

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USSR

UDC 621.371.332.4

ALEKSEYEV, G.V., VOLKOVSKIY, S.A., ZHUKOVSKIY, A.P., ONOPRIYENKO, YE.I.,
TROFIMOV, V.D. [Moscow Aviation Institute]

"Experimental Investigations Of The Effective Width Of The Surface Back
Scattering Patterns And The Distribution Of Reflected Signals In The Meter And
Decimeter Range"

Izv.VUZ: Radiofizika, Vol XV, No 2, Feb 1972, pp 200-210

Abstract: An account is given of a method of determining back scattering patterns (BSP) with the aid of the Doppler effect. The special features of the equipment for processing the signal are shown. Experimental values of the effective width O_{op} were obtained at wavelengths of 2 m, 68 cm, 34 cm, and 11.3 cm, and for various surfaces (sea, plowed fields, sandy-solonchak terrain with large crescent-shaped sand dunes, sparse forrest [summer]). The flights were horizontal at heights from 500--2000 m and at speeds from 200-400 km/hr. The results of conversion of O_{op} into the angle of slope are close to data obtained by the optical method. The experimentally obtained distribution confirmed the theoretical concepts concerning the signal structure and made it possible to determine the level of the mirror components as a function of the radiation frequency and the type of reflecting surface. It is concluded that experimental determinations of the effective width of the BSP are feasible in practice on the base of the Doppler effect with possible modulation of the probing signal. 4 fig. 10 ref. Received by editors, 11 Aug 69; after consolidation, 11 Oct 71.

1/1

- 106 -

USSR

ALEKSEYENKO, G. N., et al., Avtomaticheskaya Svarka, No 9, Sep 72, pp 20-22

and grain size near the fusion lines. In the study of weld joint mechanical properties it was established that the alloys containing Ti failed primarily in the seam and that these alloys tend to form hot cracks during welding. In contrast to this, weld joints made from the Mo-Zr-C alloys undergo failure both in the seam and along the fusion lines. In summary, additions of Zr refine the structure of the seam metal and heat-affected zone, facilitate the formation of a substructure, and increase strength and ductility of the weld joints, while Ti additions have a lesser effect on the ductility of weld joints made using the Mo-C alloy. 1 Figure, 2 tables, 6 bibliographic references.

2/2

USSR

UDC 621.791.754:669.28

ALEKSEYENKO, G. N., NERODENKO, M. M., Institute of Electric Welding imeni Ye. O. Paton; BIRYUKOVA, T. A., Mal'TSEV, M. V., and SHCHUKIN, A. A., Moscow

"Properties of Mo-C, Mo-Zr-C, and Mo-Ti-C Weld Joints"

Kiev, Avtomaticheskaya Svarka, No 9, Sep 72, pp 20-22

Abstract: The effect of zirconium and titanium on the properties of weld joints for a molybdenum-carbon alloy was investigated. Ingots of the alloys were produced in an electron-beam furnace and rolled into sheet 1 mm thick. The sheets were welded using a tungsten electrode in a controlled helium atmosphere. One heat of the Mo-C alloy contained 0.06% C (heat 1); two heats of the Mo-Zr-C alloy were made, one containing 0.04 wt% C, 0.16 wt% Zr (heat 2), the other --0.5 wt % C, 0.34 wt.% Zr (heat 3); and two heats of the Mo-Ti-C alloy, one containing 0.05 wt % C, 0.014 wt % Ti (heat 4), the other--0.055 wt % C, 0.026 wt % Ti (heat 5). Alloying with Ti and Zr increased the weld joint ductility but reduced cold brittleness. Ti was less effective than Zr, which is probably associated with the fact that small additions of Ti increase solubility of carbon in Mo in the solid state or bond the carbon into carbides. Ti and Zr also increase strength of the weld joints and seam hardness. Both elements refine the seam metal structure and positively influence the structure of the heat-affected zone, diminishing the extent of the heat-affected zone

1/2

USSR

UDC 615.849.1.015.25

ALEKSEYEVA, G. N., YEL'TSOV, A. V., KOLESOVA, M. B., MAKSIMOVA, L. I.,
RUSANOV, A. M., Leningrad Chemical-Pharmaceutical Institute

"Radioprotective Properties of 1,2-Dithiolium Derivatives"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, No 7, 1972, pp 23-27

Abstract: Study of 6 1,2-dithiolium salts and products of their reduction with dithiomalonylamides, which release sulfur on hydrolysis, showed that only those containing amino groups in positions 3 and 5 have significant radioprotective action in mice irradiated with 700 r. Methylation of the amino group decreased toxicity while slightly intensifying the protective effect. However, the compounds were all less efficacious than aminethylthiuronium (AET) which served as the control. The minimum effective dose was 300 mg/kg. Boosting the dose enhanced the radioprotective effect but increased the toxicity at the same time, causing convulsions and some deaths.

1/1

2/2 019

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0129145

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE ANALYZES 127

OPERATIONS PERFORMED FOR COARCTATION OF THE AORTA IN CHILDREN, AGED FROM 2 MONTHS TO 15 YEARS. FEATURES PECULIAR TO THE CLINICAL COURSE OF AORTIC COARCTATION AND PROBLEMS OF DIAGNOSIS IN NURSINGS ARE DESCRIBED.

IN THE CLINICAL COURSE OF AORTIC COARCTATION IN CHILDREN THREE PERIODS ARE SINGLED OUT: (1) CRITICAL, (2) PERIOD OF ADAPTATION AND (3) PERIOD OF COMPENSATION, THIS REQUIRING THE CORRECT CHOICE OF THE MODE OF THERAPY. THE AUTHORS HAVE ELABORATED THE INDICATIONS TO THE OPERATION OF RESECTION OF AORTIC COARCTATION IN CHILDREN WHICH ARE DIFFERENT IN EACH AGE GROUP AND SHOULD TAKE INTO CONSIDERATION THE PATIENT'S AGE, SEVERITY OF THE STATE, POSSIBILITY OF SUBSEQUENT GROWTH OF THE ANASTOMOSIS, ETC. THE TECHNIQUE OF DIFFERENT TYPES OF OPERATIONS AND CHOICE OF THE METHOD DEPENDING UPON ANATOMICAL CONDITIONS AND PATIENT'S AGE ARE DESCRIBED IN DETAIL. THE TOTAL MORTALITY COMPRESSED 7.9 PERCENT OF CASES. WITH ACCUMULATION OF THE SURGICAL EXPERIENCE AND AFTER THE ELABORATION OF PRINCIPLES OF POSTOPERATIVE MANAGEMENT OF PATIENTS FROM 1967 OUT OF 49 OPERATIONS, INCLUDING 10 IN EARLY CHILDHOOD, THERE WAS NOT A SINGLE LETHAL OUTCOME.

FACILITY: INSTITUT SERDECHNO
SOSUDISTOY KHIRURGII IMENI A. N. BAKULEVA, MOSKVA.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--THE SURGICAL TREATMENT OF AORTIC COARCTATION IN CHILDREN -U-

AUTHOR-(04)-BURAKOVSKIY, V.I., POKROVSKIY, A.V., BUKHARIN, V.A.,
ALEKSEYEV, G.I.
COUNTRY OF INFO--USSR

SOURCE--KHIRURGIYA, 1970, NR 6, PP 80-88

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HEART SURGERY, PEDIATRICS, ARTERIAL ANASTOMOSIS, DIAGNOSTIC
METHODS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1777

STEP NO--UR/0531/70/000/006/0080/0088

CIRC ACCESSION NO--AP0129145

UNCLASSIFIED

USSR

UDC: 621.374.5

ALEKSEYEV, G. I.

Tr. VNI magnitn. zapisi i tekhnol. radioveshch. i televid. (Works of the All-Union Scientific Research Institute of Magnetic Recording and the Technology of Radio Broadcasting and Television), 1970, vyp. 9 (19), pp 62-68 (from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11G225)

Translation: An engineering method is proposed for calculating a controlled delay line built with the use of varicaps or inductances with magnetization. Active losses in the coils are accounted for experimentally. Bibliography of three titles. Resumé.

USSR

UDC 616.134.31-07-08

ALEKSEYEV, G. I.

"Symptoms and Treatment of Radiation Sickness"

Moscow, Voenno-Meditsinskiy Zhurnal, No 2, 1971, pp 33-39

Abstract: As a result of numerous animal experiments and clinical experience, much is known about the manifestations, course, and treatment of radiation sickness. This review of the Soviet literature on the subject touches on the various forms of acute radiation sickness (from uniform external gamma irradiation, from repeated, prolonged, and fractional irradiation, from uniform external gamma-neutron irradiation, from irradiation combined with burns, wounds, or contusions), symptoms, hematologic reactions, etc. The existing methods of treatment can prevent death from 2nd and 3rd degree radiation sickness and in some cases from 4th degree lesions. Bone marrow transplants, for which the indications are given, have been found to be highly effective, especially when combined with antibiotics to control infections. Clinical radiology possesses adequate resources to cope with the various problems relating to the diagnosis and therapy of the different forms of radiation sickness.

1/1

USSR

UDC 621.762.001(088.8)

YEVGRAFOV, A. V., KORSAKOV, V. V., SKALDIN, B. A., ALEKSEYEV, G. I., KOZLOVA, G. N., and LEVANT, B. G.

"Instrument for Determining Concentration of Magnetic Powder in Suspension"

USSR Author's Certificate No 265554, Cl. 42 1, 13/04, (G01 n), filed 8 Aug 68, published 26 Jun 70 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3G351P by A. Epik)

Translation: A block diagram is presented and a description given of the working principle and operation of an instrument for determining the magnetic powder content of a suspension. The instrument contains a power unit, generator, buffer amplifier, sensing element, detector, d-c amplifier, and indicator. To increase measurement accuracy, assure linearity of readings, and simplify the scheme of the instrument, it is supplied with a magnetizer in the form of two coaxially situated annular permanent magnets. Two ferroprobe half-cells, connected via the d-c amplifier to the indicator, are installed in the magnet gap perpendicular to the axis of the magnets, with a vessel containing the medium under study mounted in the annular gap of the upper magnet. Two illustrations.

1/1

USSR

UDC 621.374.33(008.8)

DOMRACHEV, V. N., ALEKSEYEV, G. I.

"An Amplitude Selector"

USSR Author's Certificate No. 299140, Filed 29 Jul 68, Published 23 Apr 70 (from
RZh-Radiotekhnika, No 10, Oct 70, Abstract No 106202 P)

Translation: This Author's Certificate introduces an amplitude selector which contains a comparison circuit consisting of two transistors of the same conductivity type with a common emitter load, and an additional transistor of the opposite conductivity type with its base connected directly to the collector of the output transistor in the comparison circuit. To provide two operating levels, the base of the output transistor in the comparison circuit is connected to the collector of the additional transistor through a parallel circuit consisting of a capacitor and diode, the anode of the diode being connected to the collector of the additional transistor.

UDC: None

USSR

CHEGOLIN, P. M. and ALEKSEYEV, G. I.

"Device for Extrapolating Functions Specified by a Digital Code"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
No 14, 1973, p 148, No 373733

Abstract: This device contains two memory cells in series. To improve its accuracy, a third cell is introduced into the circuit with its input connected to the input of the second cell and to an input of a digital-analog unit for computing polynomials.

2/2 022

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0110109

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. ANALYSIS OF THE TRANSIENT PROCESSES ARISING IN AN N STAGE APERIODIC AMPLIFIER DURING AN INSTANTANEOUS CHANGE IN THE PHASE AND AMPLITUDE OF AN EMF ACTING AT THE AMPLIFIER INPUT. THE EQUIVALENT SOURCE METHOD IS USED TO DERIVE AN EXPRESSION FOR THE TIME VARIATION OF TOTAL VOLTAGE AT THE OUTPUT OF AN N STAGE APERIODIC AMPLIFIER. THE EXPRESSION IS USED TO STUDY THE INSTANTANEOUS VOLTAGE AT THE OUTPUT, AND ATTENTION IS GIVEN TO THE EFFECTS OF CIRCUIT TIME CONSTANTS ON THE TRANSIENT PROCESSES. IT IS SHOWN THAT THE DESIGN OF APERIODIC AMPLIFIERS INTENDED FOR USE WITH INSTANTANEOUSLY CHANGING INPUTS SHOULD STRIVE FOR MINIMUM TIME CONSTANTS OF AN ISOLATION CAPACITOR SINCE THIS REDUCES THE INTENSITY OF TRANSIENT PROCESSES AND THUS LOWERS THE LINEAR DISTORTIONS ARISING IN THE AMPLIFIER.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--PERIODIC ACTION OF SINUSOIDAL EMF'S UPON AN N STAGE APERIODIC
AMPLIFIER -U-
AUTHOR--ALEKSEYEV, G.A.
COUNTRY OF INFO--USSR
SOURCE--RADIOELEKTRONIKA, VOL. 13, JAN. 1970, P. 30-36
DATE PUBLISHED-----70
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., PHYSICS
TOPIC TAGS--ELECTROMOTIVE FORCE, PERIODIC FUNCTION, ELECTRONIC AMPLIFIER,
ELECTRONIC TRANSIENT RADIATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1991/0143 STEP NO--UR/0452/70/013/000/0030/0036
CIRC ACCESSION NO--AP0110109
UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--02 OCT 70

CIRC ACCESSION NO--AP0114270

ABSTRACT/EXTRACT--(U) SP-0- ABSTRACT. A METHOD IS PRESENTED FOR
CALCULATING THE SURFACE OF THE CATHODE SO AS TO OBTAIN MAXIMUM PRODUCTION
IN DIMENSIONAL ELECTROCHEMICAL PROCESSING UNDER STEADY STATE CONDITIONS.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--CALCULATING THE SURFACE OF A CATHODE FOR DIMENSIONAL PROCESSING -U-
AUTHOR-(03)-ALEKSEYEV, G.A., VOLKOV, YU.S., MOROZ, I.I.
COUNTRY OF INFO--USSR *A*
SOURCE--MOSCOW, STANKI I INSTRUMENT, NO 3, 1970, PP 20-21
DATE PUBLISHED-----70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.
TOPIC TAGS--CATHODE, SURFACE PROPERTY, ELECTROCHEMICAL PROPERTY

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1993/1771 STEP NO--UP/0121/70/000/003/0020/0011
CIRC ACCESSION NO--AP0114270
UNCLASSIFIED

USSR

ALEKSEYEV, E. I., et al, Radiotekhnika i Elektronika, No 5, 1970,
pp 1044-1051

field in the resonator. A satisfactory agreement between experimental and theoretical results is obtained.

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- 84 -

USSR

ALEKSEYEV, E. I., et al, Radiotekhnika, i Elektronika, No 5, 1970, pp 1044-1051

the resonator to improve pumping efficiency, leads to complete confusion inside the $5P_{1/2}$ and $5P_{3/2}$ rubidium sublevels but has no effect on the junctions² between them. This assumption is based on the fact that the average energy exchanged in the thermal motion of the colliding nitrogen molecule and the excited rubidium atom is comparable to the Zeeman and very fine separation of the two sublevels, but is much less than the difference in their energies. To simplify their calculations, the authors make several further assumptions: that at each moment, the number of rubidium atoms in the excited state is small compared to the number of atoms in the fundamental state; that uniform relaxation occurs in collisions of the rubidium atoms with the buffer gas and the walls of the resonator; that the filtration is ideal. They thus obtain expressions for oscillation conditions, the width of the operating junction lines, and the generated power, by assuming a uniform magnetic

2/3

USSR

UDC: 621.373.029.67.001.5

A
ALEKSEYEV, E. I. and BAZAROV, Ye. N.

"Theory of Rubidium Lasers with Optical Pumping"

Moscow, Radiotekhnika i Elektronika, No 5, 1970, pp 1044-1051

Abstract: While the approximation theories of the rubidium laser offered by earlier papers give a satisfactory account of the processes taking place, they do not describe the frequency characteristics of the laser and cannot be used to compute shifts in oscillation frequency caused by optical pumping. The authors begin their more detailed consideration of rubidium lasers with the equation defining the matrix of the basic state density for Rb^{87} atoms. In the derivation of this equation, obtained from an earlier paper (Alekseyev, Bazarov, and Levshin, Radiotekhnika i Elektronika, 1969, 14, 11, p. 2026) it was assumed that the collisions between rubidium atoms and those of nitrogen, injected into

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USSR

UDC 532.526

ALEKSEYEV, B. V., Pogranichnyy Sloy s Khimicheskimi Reaktsiyami, Acad. Sci. USSR Computer Center, Moscow, 1967, 128 pages.

of the body, was considered in the calculations. The results of several calculations of boundary layers are presented in a Table. The non-equilibrium boundary layer is numerically integrated along the generatrix of a body of rotation (a sphere), on the surface and in the pores of which the chemical reactions occur.

(See also: Turbulent Hypersonic Flow About a Concave Angle, Abstract No 11 B317).

USSR

UDC 532.526

ALEKSEYEV, B. V., *Pogranichnyy Sloy s Khimicheskimi Reaktsiyami*, Acad. Sci. USSR Computer Center, Moscow, 1967, 128 pages.

ditions on the moving surfaces, of which there may be several. The surface temperature or degree of gassification frequently fixed as boundary conditions must also be determined by solution of the problem. This monograph is dedicated to statement of the problem and numerical solution of the equations of a chemically non-equilibrium boundary layer. The presentation of the theory of a non-equilibrium boundary layer is preceded by presentation of the necessary information from the kinetic theory of gases and chemical kinetics, so that the monograph is complete within itself. Extensive numerical computer modeling of the flows of mixtures of gases with chemical reactions is performed in the monograph.

Numerical results produced in calculations of frozen and equilibrium boundary layers are compared with the results of calculation of a chemically non-equilibrium boundary layer. The influence of the model of interaction of molecules and divergence in experimental data on saturated carbon vapor pressure, when carbon is used as a hypothetical heat-protective coating, on parameters of the boundary layer is studied. The terminal rate of the chemical reactions not only in the gas phase, but on the surface and in pores

2/3

USSR

UDC 532.526

ALEKSEYEV, B. V.

"The Boundary Layer with Chemical Reactions"

Pogranichnyy Sloy s Khimicheskimi Reaktsiyami [English Version Above], Acad. Sci. USSR Computer Center, Moscow, 1967, 128 pages, (Translated from Referativnyy Zhurnal, Mekhanika, No 11, 1972, Abstract No 11 B680 K by the author).

Translation: In recent years, the new science of aerothermochemistry has grown up at the junction of such sciences as the kinetic theory of gases, chemical kinetics and gas dynamics. The new science studies the flow of gases at high velocities, when chemical conversions are possible. Due to the rapid development of missile technology, the problem of thermal protection of apparatus operating at very high temperatures has developed. The process of ablation of the material of a thermal protective layer is quite complex. This process may involve fusion, fusion with evaporation of a liquid film, sublimation, surface combustion, mechanical or thermal erosion of the ablation surfaces.

A strict statement of these problems requires solution of nonlinear parabolic equations describing the hypersonic boundary layer with edge con-

1/3

2/2 025 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0120273
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE HARMFUL EFFECTS OF
THE PRESENCE OF NATURAL AND TECHNICAL IMPURITIES IN THE CIRCULATED AIR
ON THE TIME DEPENDENT PERFORMANCE OF GAS TURBINE UNITS. SPECIAL
ATTENTION IS GIVEN TO THE DAMAGE FROM THE IMPURITIES PRODUCING EROSION,
DEPOSITS AND OVER HEATING IN THE AIR FLOW SECTIONS OF GAS TURBINES. A
GENERALIZED POLYTROPE TECHNIQUE IS USED TO ESTIMATE THESE DAMAGING
EFFECTS. REQUIREMENTS WHICH SHOULD BE MET BY THE AIR INTAKE SYSTEMS
ARE INDICATED. DESIGN CONSIDERATIONS ARE SET FORTH TO REMEDY THESE
UNDESIRABLE EFFECTS.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--FOREIGN INCLUSIONS IN THE CYCLED AIR AND THE REQUIREMENTS FOR THE
AIR TAKING SYSTEMS OF A GAS TURBINE UNIT -U-
AUTHOR-(03)-ALEKSEYEV, A.V., YEFREMOV, B.G., MIKHAYLOV, YE.I.

COUNTRY OF INFO--USSR

SOURCE--ENERGOMASHINOSTROENIE, VOL. 16, FEB. 1970, P. 7-9

DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, ENERGY CONVERSION
(NON-PROPULSIVE)
TOPIC TAGS--GAS TURBINE, EROSION, IMPURITY LEVEL, AIR BREATHING ENGINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1486

STEP NO--UR/0114/70/016/000/0007/0009

CIRC ACCESSION NO--AP0120273

UNCLASSIFIED

2/2 027 UNCLASSIFIED PROCESSING DATE--09OCT70
CIRC ACCESSION NU--AP0108798
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE PAPER THE RESULTS OF
EXPERIMENTS ON CADAVERS AND ANIMALS TO THE END OF STUDYING
CRANIOCEREBRAL CHANGES DURING GUNSHOT INJURIES ARE REPORTED. THE HIGH
SPEED FILMING AND IMPULSE RENTGENOGRAPHY WERE EMPLOYED. THE
DEVELOPMENT OF A TEMPORARY PULSATING CAVITY AND DISPLACEMENT OF AN ORGAN
AFTER BULLET PENETRATING IT ARE DESCRIBED. KAFEDRY VOYENNU
POLEVGOY KHIRURGII AND KAFEDRY NORMAL'NOY ANATOMII VOYENNU MEDITSINSKOY
ORDENA LENINA KRASNOZNAMENNOY AKADEMII IM. S. M. KIROVA.

UNCLASSIFIED

1/2 027 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--ON THE MECHANISM OF GUNSHOT CRANIOCEREBRAL INJURIES -U-

AUTHOR-(04)-ALEKSANDROV, L.N., DYSKIN, YE.A., OZERETSKOVSKIY, L.B.,
ALEKSEYEV, A.V.
COUNTRY OF INFO--USSR

A
SOURCE--VESTNIK KHIRURGII IMENI I. I. GREKOVA, 1970, VOL 104, NR 5, PP
81-85
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--GUNSHOT WOUND, CEREBRUM, RADIOLOGY, MEDICAL EXPERIMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/0583

STEP NO--UR/0582/70/104/005/0081/0085

CIRC ACCESSION NO--AP0108798

UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0105052

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SOUND MODULATION WAS CONSIDERED OF THE INTENSITY OF THE SIGNAL OF SPIN ECHO. IN THIS PROCESS THE VARIABLE FIELD OF SOUND DEFORMATIONS CAUSES THE APPEARANCE OF A VARIABLE COMPONENT OF THE INTRACRYST. FIELD AS A RESULT OF WHICH THE NO. OF SPINS CHANGES, WHICH PARTICIPATE IN THE FORMATION OF THE SIGNAL ECHO. CALCUL. WAS CARRIED OUT BY THE METHOD OF THE EVOLUTION OPERATOR. IN THIS, IT WAS ASSUMED THAT THE HAMILTONIAN OF THE INTERACTION OF THE SPIN SYSTEM WITH GENERATOR OF THE IMPULSES IS REPRESENTED BY THE SUM OF 1 PARTICLE OPERATORS RELATIVE TO MAGNETIC PARTICLES, LINEAR IN SPIN, WHICH IS FULFILLED FOR THE SPIN OF S EQUALS ONE HALF, AND ALSO FOR S IS GREATER THAN ONE HALF. IN ADDN., IT WAS ASSUMED THAT THE SPIN SYSTEM DOES NOT PRODUCE AN INVERSE ACTION ON THE SOUND GENERATOR AND THAT PRIOR TO THE EXCITATION TEMP. OF THE SPIN SYSTEM kT IS MUCH GREATER THAN $h\nu$ SUBS, WHERE ν SUBS IS THE FREQUENCY WIDTH OF THE LINE OF THE EXCITED TRANSITION. IN THE CASE OF CD PRIME2 POSITIVE IN MGO CRYSTAL, IF THE CONST. MAGNETIC FIELD IS 3 TIMES 10 PRIME4 G THEN MAX. DECREASE IN THE INTENSITY OF THE SIGNAL OF SPIN ECHO IS OF THE ORDER OF 32 PERCENT FROM THE INITIAL INTENSITY, I.E. IT IS A QUITE NOTICEABLE MAGNITUDE.

FACILITY: KAZAN. FIZ. TEKH. INST., KAZAN, USSR.

UNCLASSIFIED

1/2 029 UNCLASSIFIED
TITLE--SOUND MODULATION OF SPIN ECHO -U-

PROCESSING DATE--23OCT70

AUTHOR--ALEKSEYEV, A.V.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(3), 941-3

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--SPIN SYSTEM, ACOUSTIC REVERBERATION, HAMILTONIAN, SOUND
GENERATOR, ELECTRON TRANSITION, MAGNESIUM OXIDE, COBALT, CRYSTAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/1978

STEP NO--UR/0181/70/012/003/0941/0943

CIRC ACCESSION NO--AP0105052

UNCLASSIFIED

USSR

UDC 547.71+542.952.1+661.718

RAKOV, A. P., and ALEKSEYEV, A. V., Chushovsk State University Imeni I. N. Ul'yanov

"Reactions of the Esters of β , γ -Epoxypropylphosphonic Acid With Aliphatic Alcohols"

Leningrad, Zhurnal Obshchey Khimii, Vol 43(105), No 2, Feb 73, pp 276-278

Abstract: Esters of β , γ -epoxypropylphosphonic acid react with alcohols in presence of basic catalysts to form α, β -unsaturated alcohols. A new group of unsaturated organophosphorus alcohols of the type $\text{OHCH}_2\text{-CH=CHP}(\text{:O})(\text{OR})_2$ was produced. The structure was proved by IR and PMR spectroscopy.

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CONTINUATION SHEET

CONFIDENTIAL

FORM 101 (2-70)
GPO : 1970 O - 570-070

1. W. H. M. N. L. - The Results of Seismic Research of the Earth's Crust and Mantle in the USSR and Problems of Future Research.
2. ANTON L. RHEVILZ - Concerning the Question of Interpretation of Data in the Earth's Crust.
3. F. M. M. S. R. - Methods of Interpreting Seismic Data in the Crust of the Earth's Crust.
4. A. S. S. V. N. - Several Comments on Deep Seismic Research in the USSR.
5. V. G. V. N. N. O. - Method of Detailed Studies of the Seismic Motion of the Crust of the Earth's Crust with a Sample of Seismicity.
6. B. S. S. O. G. U. B. - Exposing Cracks in the Earth's Crust Using the Seismic Method.
7. N. I. I. A. V. L. E. N. O. V. A. - Methods for Quickly Determining the Parameters of the Seismicity of the Earth's Crust.
8. G. M. M. I. O. T. A. - The Spectra and the Frequency of Deep Waves.
9. L. V. V. I. S. S. I. E. R. - Seismic Research of the Outer Mantle of the Earth's Crust.
10. S. M. S. E. V. E. N. Y. - Deep Seismic Soundings in the Sea.
11. B. S. S. O. N. T. A. S. - Anisotropic Speed of the Outer Mantle of the Pacific Ocean.
12. A. G. G. O. V. O. S. S. Y. - Generalization and Analysis of Crustal and Deep Seismic Soundings.
13. G. I. I. Z. E. - Questions of Interpretation and Comparison of Seismic Research Data of the Earth's Crust for Various Regions.
14. A. S. S. V. E. Y. - Concerning the Nature of Waves and the Methods of Comparison of the Earth's Crust on Deep Seismic Soundings Data.
15. M. D. D. I. B. E. R. N. I. - Seismic Research of the Earth's Crust in Canada.
16. O. S. S. A. Y. E. N. - Questions of Explosive Seismological Methods.

CONFIDENTIAL

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ALEKSEYEV, A.S.

ALEKSEYEV, A.S.

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CONFIDENTIAL

1. **Subject:** (C) Information on the activities of the Soviet Union in the field of Explosive Technology. (S) 1/1/1969 (S) 1/1/1969 (S) 1/1/1969

2. **Source:** (C) Information on the activities of the Soviet Union in the field of Explosive Technology. (S) 1/1/1969 (S) 1/1/1969 (S) 1/1/1969

3. **Summary:** (C) Information on the activities of the Soviet Union in the field of Explosive Technology. (S) 1/1/1969 (S) 1/1/1969 (S) 1/1/1969

4. **Comments:** (C) Information on the activities of the Soviet Union in the field of Explosive Technology. (S) 1/1/1969 (S) 1/1/1969 (S) 1/1/1969

5. **References:** (C) Information on the activities of the Soviet Union in the field of Explosive Technology. (S) 1/1/1969 (S) 1/1/1969 (S) 1/1/1969

6. **Attachments:** (C) Information on the activities of the Soviet Union in the field of Explosive Technology. (S) 1/1/1969 (S) 1/1/1969 (S) 1/1/1969

7. **Conclusion:** (C) Information on the activities of the Soviet Union in the field of Explosive Technology. (S) 1/1/1969 (S) 1/1/1969 (S) 1/1/1969

8. **Recommendations:** (C) Information on the activities of the Soviet Union in the field of Explosive Technology. (S) 1/1/1969 (S) 1/1/1969 (S) 1/1/1969

9. **Final Remarks:** (C) Information on the activities of the Soviet Union in the field of Explosive Technology. (S) 1/1/1969 (S) 1/1/1969 (S) 1/1/1969

10. **Signature:** (C) Information on the activities of the Soviet Union in the field of Explosive Technology. (S) 1/1/1969 (S) 1/1/1969 (S) 1/1/1969

11. **Date:** (C) Information on the activities of the Soviet Union in the field of Explosive Technology. (S) 1/1/1969 (S) 1/1/1969 (S) 1/1/1969

12. **Initials:** (C) Information on the activities of the Soviet Union in the field of Explosive Technology. (S) 1/1/1969 (S) 1/1/1969 (S) 1/1/1969

13. **Comments:** (C) Information on the activities of the Soviet Union in the field of Explosive Technology. (S) 1/1/1969 (S) 1/1/1969 (S) 1/1/1969

14. **Final Remarks:** (C) Information on the activities of the Soviet Union in the field of Explosive Technology. (S) 1/1/1969 (S) 1/1/1969 (S) 1/1/1969

Possibly European Division / Scientific Commission,漢堡, 3-11 24 68

CRYOGENIC HIGH-FREQUENCY ACCELERATING SYSTEM FOR A KINOTRON

by

N.G. Anisimov, A.S. Aleksey, N.I. Balykin, A.A. Belashina,
V.A. Vasiliev, I.N. Gornichov, Yu.S. Deryuzhskiy, A.G. Zait'kovich,
N.K. Zait'kovich, A.B. Kuznetsov, Yu.V. Marilov, N.B. Rudin,
A.A. Saburov, V.P. Savenkov, Yu.I. Seimov, I.S. Shubareva,
V.G. Shubarev and Yu.A. Shishov

The choice of the main parameters of a cryogenic high-frequency accelerating system is discussed, and the basic construction elements of the system are described. Preliminary results of an investigation into the high-frequency properties of superconductors of the high-kind are reported, and technological aspects of the production of superconducting resonator coatings are reviewed.

1. INTRODUCTION

In the collective linear accelerator, proposed in Refs. 1 and 2 for the acceleration of heavy particles to high energies, the ions are accelerated inside electron rings while they travel together with these rings through a

ALEKSEYEV, A.S.

ALEKSEYEV, A.S.

Electric & Power 11-70

(M)

SIAC TRANS - 111

11-70-2-11

CHROMIC HIGH-FREQUENCY ACCELERATING

SYSTEM FOR A RINGOTRON

by

S.O. Anisimov, A.S. Alekseyev, N.I. Belykh, A.A. Belov, V.A. Vasil'ev, I.N. Gornostayev, Yu.S. Derzhayev, A.G. Zel'dovich, N.K. Zel'dovich, A.B. Kuznetsov, Yu.V. Muratov, S.B. Nalin, A.A. Sabeev, V.P. Sarantsev, Yu.I. Shtrom, I.S. Shubnikov, V.G. Shadrinov and Yu.A. Shishov

Translated by T. Wate
(February 1970) from the
Russian *Lezginskaya Vysshaya
Shkola* *Uchenye Zapiski*
Uchenye Zapiski
Preprint 118-70-472.
Dubna (1969). 13 pages.

TRANSLATED FOR
STANFORD LINEAR ACCELERATOR CENTER

48

Geophysics

24. THEOREM OF GEOPHYSICS

1169

THE UNIVERSITY OF CHICAGO

42-100000-100000

[illegible]

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the polybaric characteristics in adjacent blocks, in order to obtain data on the physical parameters of the bottom of the crust and the top of the mantle in zones of deep faults it is necessary to have extremely detailed systems of observations for solving the problem of spatial structuring of a sector and determining differences in the reflecting properties of deep discontinuities. The authors have a report on observations of the seismicity of the Altaian area and the consolidated crust in the Pacific island area. I. S. Polubnyy gave a report on the structuring of seismic methods and deep seismic sounding for crustal studies. I. S. Polubnyy, et al. reported on observation systems used in deep seismic sounding and seismic prospecting. The time, place and program for the next sector meeting were decided; the second conference will be held in May 1969 in Alma-Ata.

(Abstract: "Current Problems in Deep Seismic Sounding in the USSR", by I. S. Polubnyy, N. I. Davydova and M. K. Radzintsovi; Moscow, Izdatiya Akademichesk SSSR, Fizika Zemli, No. 2, 1969, pp. 115-118)

By the middle of the 1950s the study of the earth's crust was based mainly on the registration of reflected waves at considerable distances (over 100 kilometers) from the source. First distinguished were refractive waves connected with the Mohorovicic discontinuity (M) with a velocity of about 6 km/sec, and subsequent intensive vibrations related to reflections on an intermediate boundary in the crust, the Conrad-Ki boundary. The development of detailed observations and especially successful in the dynamic theory of wave propagation permitting more intensively studying the wave field and arriving at the conclusion that the previously proposed explanation of the nature of waves connected with the K and Ki boundaries is incorrect. The introduction of computers has substantially changed the very approaches to the interpretation of seismic data. The theoreticians have shown that in many cases the inverse problem of seismology is multi-valued and that several models of the medium can correspond to the same experimental data.

On the basis of theoretical forecasts of seismic fields for a broad class of models, experiments have begun to seek more and more boldly new waves on the recordings and create systems of observations which permit narrowing the limits of ambiguity in the search for an optimal model. Experiment and its theoretical analysis had already by about 1965 convincingly shown that in a seismic field the main waves as regards intensity are supercritical reflected waves and arriving or reflected, and not body, that is, glancing waves, as was earlier thought on the basis of mainly kinematic concepts. In connection with that, in continental zones the P waves, previously related to waves reflected on the Conrad boundary, are now regarded as supercritical waves reflected from the Moho, and reflected P waves as quasi-wave of weakly refracted waves arriving in the uppermost parts of the mantle. In the subsequent part of a seismic recording in many regions one observes reflected waves connected with intermediate boundaries. They are definitely unstable and it is a complex matter to trace them within the limits of large regions. This makes it difficult to separate the crust into definite velocity stages, and the very concept of the Conrad boundary as an intermediate boundary in the crust between the "granite" and the "basaltic" layers becomes essentially indefinite. Connected with that indeterminacy is the rejection by most seismologists of the conventional terms "granite" and "basaltic" layers and the striving to replace them with concrete values of measured velocities, for example, "the layer with a velocity of 6.5 km/sec".

Of principal importance in seismology are supercritical reflected waves, traced near the source. Very detailed and precise seismic surveying is based on them, but until recently such

on the totality of the photographs, as is customary in ordinary profile observations.

On the basis of the above, deep-sea seismic sounding is considered in the form of joint registration of reflected and refracted waves and registration of observed or calculated travel times. To increase the reliability of separation of signals in the background of noise, just as in land observations, registration systems of registration are proposed, consisting of several receiving points. At small distances, non-extensive automatic false sources with small intervals between pulses are used, and more widely spaced pulses are possible to be used at larger distances. In the registration of waves reflected from deep-sea bottom, among the very interesting results of such investigations in recent years are those that have been used to determine the anisotropy of velocity in the mantle and to obtain observations in rift valleys of means of registering stations in the bottom with simultaneous registration of waves from explosions and great earthquakes.

In deep-sea sounding techniques, however, the changes that have occurred in the last ten years have not been so great as could have been expected on the experience of land examples of seismic surveying. In the USSR and many other countries the method of the "super channel" project has been mainly characterized by standardization of apparatus, with a transition from analog to digital recording in a narrow range of frequencies to broad-band recording -- on magnetic film. However, that process has proceeded relatively slowly. The range of predominant frequencies in deep-sea sounding is now about 5-20 Hz on the continental shelf and 1-20 Hz in sea. In the registration of reflected waves, rather frequencies (10-20 Hz) are used. Substantial successes have been achieved in increasing the effective sensitivity of the apparatus in the application of groups of receivers and machine methods of clearing the recording of noise. Nevertheless, in studies with the distance of registration and correspondingly the depth of the method are still inadequate for the solution of many problems connected with study of the structure of the upper mantle and crust. In particular, especially acute is the question of increasing the depth of investigations in bathymetric regions (for example, the Canaries and Mid-Atlantic) in the rift zones of the ocean and in the shelf zones in the approach to the continent.

The future experimental procedure in deep-sea sounding is depicted as a combination of detailed and not-detailed linear and area schemes of observations, selected in strict accordance with the posed geophysical tasks. In that an ever-larger role must be played by procedure directed toward the registration of deep-subcritical reflected waves, and also three-component receivers for the optimal reception of transverse and body waves side by side with longitudinal ones.

Now all the motivations of the structural criterion in geology technology being developed on different countries have drawn a lower level of development, as a result of a systematic method of studying the earth's crust. The deep layers of sedimentation have provided a qualitative and quantitative analysis of different types are represented on the structural bodies and related, differentiated, tectonized, renewed, and constructions. Contemporary methods of observation in deep seismic sounding assure not only determination of the depths of the crust but also the construction of the average properties along the lines of observation with data on the velocity parameters of the crust and the relief of the deep boundaries and with the characteristics of the deep layers which reflects the absorptive properties of the medium. The detail of seismic observations has reached in deep seismic sound and a degree sufficient for the detection and tracing of deep fault zones, distinctive features of geological structures, the determination of lateral heterogeneities in the velocities of waves and the morphology of the principles in the velocities of and for study of the anisotropy of velocities.

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ALEKSEYEV A.S.

THE MAIN PRINCIPLES AND METHOD OF EXPANSION SEISMOLOGY

Article by Doctor of Physical and Mathematical Sciences I. P. Alekseyev, Corresponding Member of the AS USSR N. N. Davydov, and Doctor of Physical and Mathematical Sciences A. S. Alekseyev. ISSN 0013-788X, Journal of Geophysics, Moscow, Vol. 12, No. 9, September 1977, pp. 144-151.

In contrast with the classical seismology of natural earthquakes, modern seismology studies seismic vibrations excited artificially. It includes seismic surveying, deep seismic sounding and "large explosions", combining the complex of investigations connected with the registration of waves excited by industrial -- chemical and nuclear -- explosions. At the present time the most developed (in the sense of equipment, procedure and theory) is the first area, which plays an enormous role in the surveying of structure of the earth promising as regards searches for petroleum, gas or ores. Ideas of seismic surveying are based all the remaining areas of seismology. The depths of seismic surveying are growing from year to year (in the last ten years they have almost doubled, reaching 7-10 kilometers), thanks to which seismic sounding, which in essence is the deep surveying of the earth's crust and upper parts of the mantle, however, the object of investigation and the task of deep seismic sounding have their own specific features. Investigations in the area of "large explosions" have in many countries, and especially in the USSR, acquired independent importance in methodical and interpretive respects. They are used both for special purposes and also for the study of the mantle down to the core. In our article the main attention will be given to the core. In our last paper, but in the procedure of studying the earth's crust and the upper parts of the mantle.

The structural direction in seismology, with a tendency toward intensified investigation of the earth's crust, began to

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ALEKSEYEV, A. S. and MEGRABOV, A. G., Mat. Probl. Geofiz.--Sbornik, No 3,
1972, pp 8-36

half-space for the given forms of moving and reflected waves--to be known
inverse spectral problem of Sturm-Liouville.

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Acoustical and Ultrasonic

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UDC 550.83.01

ALEKSEYEV, A. S. and MEGRABOV, A. G.

"Direct and Inverse Problem of Plane Wave Scattering in Non-Uniform Transition Layers. I. (Problems for SH-type Waves in the Hyperbolic Case)"

Novosibirsk, Mat. Probl. Geofiz.--Sbornik (Mathematical Problems of Geophysics --Collection of Works), No 3, 1972, pp 8-36 (from Referativnyi Zhurnal--Geologiya, No 5, May 73, Abstract No 5D115 by the authors)

Abstract: The problem of scattering of plane obliquely moving waves of the SH type on a non-uniform elastic and isotropic space (or in the partial case of a transition layer) with arbitrary laws of change of properties as functions of normal coordinates in the hypothesis about the plane character of a reflected wave can be reduced to a certain two-dimensional case with an oblique arbitrary wave which in relation to the nature of an un-uniform medium and angle of incidence can have hyperbolic, elliptical and mixed types. Formulation of the direct problem is given for the first two cases and the direct and inverse problems for the hyperbolic case are solved. Solution of the direct problem is based on the method of separation of variables; the corresponding unidimensional operator turns out to be non-self-adjoint in this instance. The found solution of the direct problem makes it possible to take the inverse problem--determination of the characteristics of non-uniform scattering

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UDC: 621.372.54:621.315.613.7(088.8)

ALEKSEYEV, A. N., PAUZHNIKOV, V. M., SEMENOV, V. S., Moscow Engineering
Physics Institute

"A Piezoelectric Filter"

USSR Author's Certificate No 266966, filed 4 Oct 68, published 14 Jul 70
(from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1V348 P)

Translation: A piezoelectric filter is proposed which is made from a piezoelectric ceramic plate with electrodes attached to both sides. The plate is polarized in the direction perpendicular to the plane of the electrodes. To simplify construction of the filter, the input and output electrodes are fitted with rectangular lugs which are asymmetrically located with respect to one another.

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ALEKSEYEV, A. N., et al., Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 40, No 1, Jan/Feb 71, pp 28-32

when larvae received the poison at an early stage (the 1st or 2nd vs. 3rd instar). Imagoes and larvae of *X. cheopsis* were less sensitive to the effect of the organofluorine compounds than those of *C. consimilis*.

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Entomology

USSR

UDC 614.449.577.51-084.484:615.285.7

ALEKSEYEV, A. N., AVDEYEVA, YE. V., TUROV, I. S., and TOKAREVA, T. G., All-Union Scientific Research Institute of Disinfection and Sterilization, Ministry of Health USSR, and Moscow State University imeni M. V. Lomonosov, Moscow

"The Chemosterilizing Effect of Organofluorine Compounds on Larvae and Imagoes of Fleas That Are Ectoparasites of Rodents"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 40, No 1, Jan/Feb 71, pp 28-32

Abstract: Sodium fluoroacetate and fluoroacetamide in sublethal doses were administered to imagoes of the fleas *Ceratophyllus consimilis* and *Xenopsylla cheopsis* by feeding them on an apparatus previously described by A. N. Alekseyev (Med. parazitol., No 4, 467, 1965). Larvae of the fleas were given these compounds by feeding them on excrement from imagoes that received the poison by being fed wither through a membrane or on the blood of poisoned mice used as hosts. The F-containing poisons in doses of approximately 0.5×10^{-3} gamma inhibited reproduction and reduced the fertility of fleas, when administered to either male or female adult fleas. They also reduced to a marked extent the fertility of imagoes grown from larvae that had received poison, besides having a toxic effect on the larvae. Inhibition of fertility was more pronounced

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UDC 595.421

ALEKSEYEV, A. N., Central Scientific Research Institute of Sterilization and Insect Eradication, Ministry of Health USSR

"Artificial Measured Feeding of Ixodes persulcatus Sch. Ticks, the Main Vectors of Tickborne Encephalitis"

Leningrad, Parazitologiya, No 5, 1971, pp 392-400

Abstract: Using a device that he designed for the dosed feeding of insects, the author succeeded in feeding (infecting) hungry Ixodes persulcatus females, males, and nymphs with a suspension containing tickborne encephalitis virus. Such feeding stimulated the females to cling more tenaciously to the host and when placed on mice they clung almost twice as tenaciously as hungry ticks. These females also deposited infected eggs. This device can be employed not only to give specified amounts of virus to ticks, but to observe the dynamics of salivation and defecation. Artificial dosed infection of I. persulcatus ticks is of value in studying transphase and transovarial transmission of tickborne encephalitis virus in relation to dose and virulence and in investigating changes in the properties of known viral strains in ticks and their offspring. It also permits infection of ticks with a mixture of immune serum and virus both together and successively in different proportions.

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BIBIKOVA, V. A., et al., Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 42, No 1, Jan/Feb 73, pp 69-73

resistance of *P. pestis* was also increased by prior infection with salmonellae, but the effect was much less pronounced. Presence or absence of salmonellae did not affect the rate at which *P. pestis* finally multiplied. Simultaneous infection with salmonellae and *P. pestis* did not interfere with the formation of a proventriculus block and consequently with the mechanism by which fleas transmit plague. At the same time, conditions favoring transmission of salmonellae to warm-blooded animals were created. This was demonstrated in experiments on mice, which were infected with both salmonellosis and plague upon being bitten by fleas that carried the causative factors of both diseases. As had already been observed by other authors, salmonellae had a pathogenic effect on the fleas.

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Vector Studies

USSR

UDC 576.851.49+576.851.45/.095.38

BIBIKOVA, V. A., KHRUSTSELEVSKAYA, N. M., and ALEKSEYEV, A. N., Central-Asian Scientific Research Antiplague Institute, Alma-Ata, and Order of the Labor Red Banner Institute of Medical Parasitology and Tropical Medicine imeni Ye. I. Martynovskiy, Ministry of Health USSR, Moscow

"Infection of a Transmitter With Several Pathogens. The Fate of Salmonella and Pasteurella pestis in Fleas"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 42, No 1, Jan/Feb 73, pp 62-73

Abstract: Salmonellae are known to be present in fleas at foci of plague. In experiments carried out on fleas of gerbils and rats, the effects of salmonellae and *P. pestis* on each other upon mixed infection with them of the fleas were studied. *Salmonella typhimurium* and *S. enteritidis* were used in the experiments. On simultaneous infection of the fleas with salmonellae and *P. pestis*, the rate of survival of the salmonellae during the first hours was higher than that of *P. pestis*. Subsequently the salmonellae perished at a higher rate than *P. pestis* and towards the 35th day only *P. pestis* remained. Initial infection of the fleas with *P. pestis* followed by infection with salmonellae increased the rate at which the latter perished. This was due to an increase in the unspecific resistance of the organism manifested in a bactericidal effect. The unspecific

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ALEKSEYEV, A. N., et al., Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, No 5, 1971, pp 571-577

intensifying the injurious effect of the toxins elaborated by the microbes, it is a synergist of the latter in that it intensifies the pathogenic effect of their toxins on the vector.

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